



Scientific Drilling
Rocky Mountain Operations

Company: OXY USA RMAT
Project: Garfield County, CO NAD27
Site: Cascade Creek 697-05C Pad



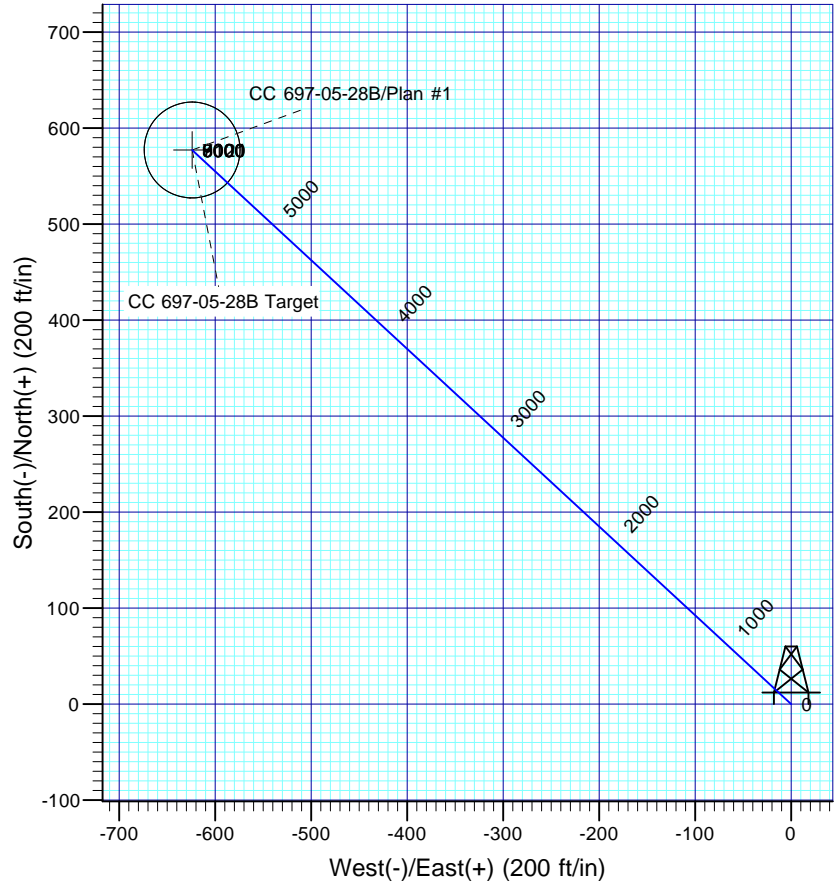
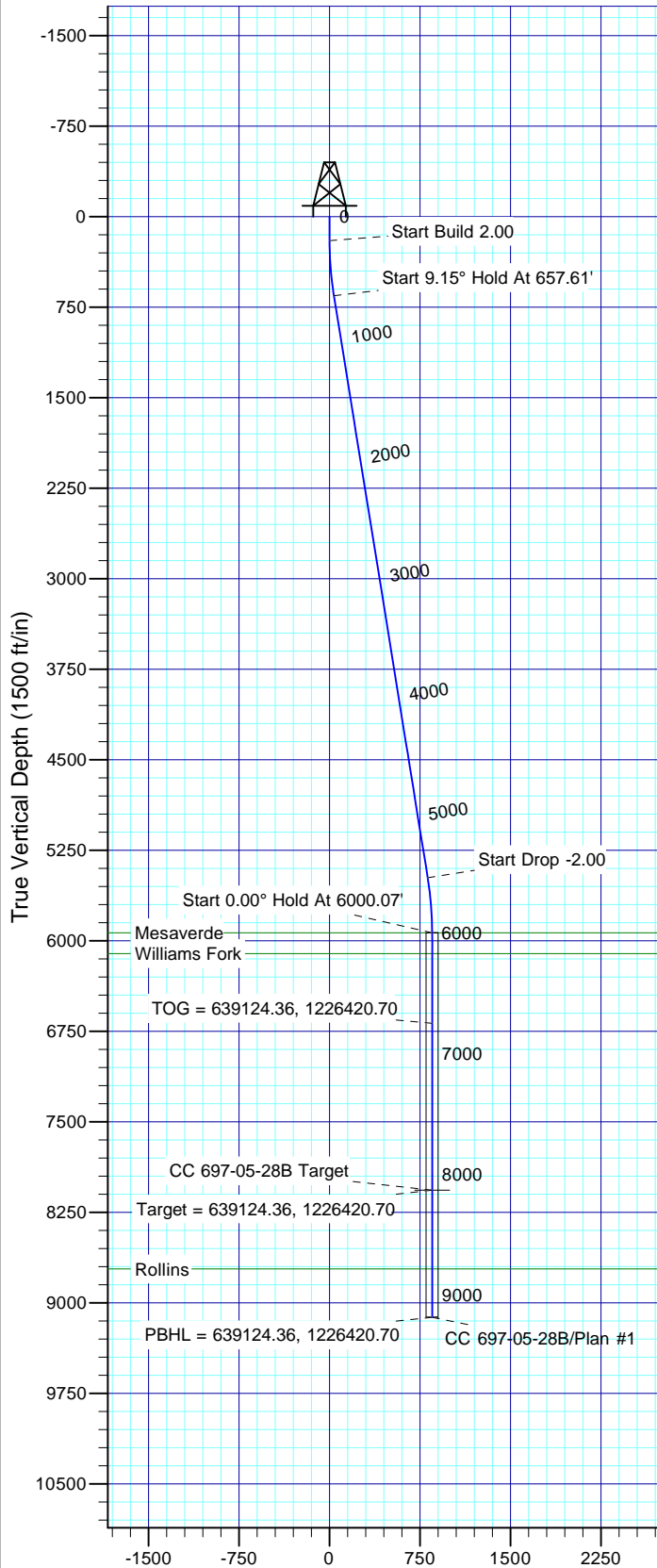
Well Details: CC 697-05-28B

TVD Reference: GL 8429' & RKB 30' @ 8459.00ft (H&P) Ground Level: 8429.00
+N/-S 0.00 +E/-W 0.00 Northing 638528.74 Easting 1227026.99 Latitude 39° 33' 16.412 N Longitude 108° 14' 30.183 W Slot K



Azimuths to True North
Magnetic North: 10.51°

Magnetic Field
Strength: 52311.6snT
Dip Angle: 65.77°
Date: 2010/12/16
Model: IGRF2005-10



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5934.00	6000.07	Mesaverde
6107.00	6173.07	Williams Fork
8720.00	8786.07	Rollins

Plan: Plan #1

14:19, December 28 2010
Created By: Rex Hall

PROJECT DETAILS: Garfield County, CO NAD27

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Colorado Central 502

System Datum: Mean Sea Level

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	657.61	9.15	312.76	655.66	24.76	-26.78	2.00	312.76	36.47	
4	5542.47	9.15	312.76	5478.34	552.29	-597.21	0.00	0.00	813.44	
5	6000.07	0.00	0.00	5934.00	577.05	-623.98	2.00	180.00	849.91	
6	8133.07	0.00	0.00	8067.00	577.05	-623.98	0.00	0.00	849.91	CC 697-05-28B Target
7	9186.07	0.00	0.00	9120.00	577.05	-623.98	0.00	0.00	849.91	

OXY USA RMAT

**Garfield County, CO NAD27
Cascade Creek 697-05C Pad
CC 697-05-28B - Slot K**

OH

Plan: Plan #1

Standard Planning Report

28 December, 2010

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-28B - Slot K
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-28B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project	Garfield County, CO NAD27		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Colorado Central 502		

Site	Cascade Creek 697-05C Pad, Sec. 5 T6S R97W		
Site Position:		Northing:	637,463.43 usft
From:	Map	Easting:	1,226,150.07 usft
Position Uncertainty:	0.00 ft	Slot Radius:	0.000 in
		Latitude:	39° 33' 5.626 N
		Longitude:	108° 14' 40.963 W
		Grid Convergence:	-1.73 °

Well		CC 697-05-28B - Slot K				
Well Position	+N/-S	1,091.32 ft	Northing:	638,528.74 usft	Latitude:	39° 33' 16.412 N
	+E/-W	844.34 ft	Easting:	1,227,026.98 usft	Longitude:	108° 14' 30.183 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	8,429.00 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2005-10	2010/12/16	10.51	65.77	52,312

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	312.76

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
657.61	9.15	312.76	655.66	24.76	-26.78	2.00	2.00	0.00	312.76	
5,542.47	9.15	312.76	5,478.34	552.29	-597.21	0.00	0.00	0.00	0.00	
6,000.07	0.00	0.00	5,934.00	577.05	-623.98	2.00	-2.00	0.00	180.00	
8,133.07	0.00	0.00	8,067.00	577.05	-623.98	0.00	0.00	0.00	0.00	CC 697-05-28B Target
9,186.07	0.00	0.00	9,120.00	577.05	-623.98	0.00	0.00	0.00	0.00	

Scientific Drilling International

Planning Report

Database:	EDM-RexH-Local	Local Co-ordinate Reference:	Well CC 697-05-28B - Slot K
Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-28B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
300.00	2.00	312.76	299.98	1.18	-1.28	1.75	2.00	2.00	0.00
400.00	4.00	312.76	399.84	4.74	-5.12	6.98	2.00	2.00	0.00
500.00	6.00	312.76	499.45	10.66	-11.52	15.69	2.00	2.00	0.00
600.00	8.00	312.76	598.70	18.93	-20.47	27.88	2.00	2.00	0.00
657.61	9.15	312.76	655.66	24.76	-26.78	36.47	2.00	2.00	0.00
Start 9.15° Hold At 657.61'									
700.00	9.15	312.76	697.52	29.34	-31.73	43.21	0.00	0.00	0.00
800.00	9.15	312.76	796.24	40.14	-43.40	59.12	0.00	0.00	0.00
900.00	9.15	312.76	894.97	50.94	-55.08	75.02	0.00	0.00	0.00
1,000.00	9.15	312.76	993.70	61.74	-66.76	90.93	0.00	0.00	0.00
1,100.00	9.15	312.76	1,092.42	72.54	-78.44	106.84	0.00	0.00	0.00
1,200.00	9.15	312.76	1,191.15	83.34	-90.11	122.74	0.00	0.00	0.00
1,300.00	9.15	312.76	1,289.88	94.14	-101.79	138.65	0.00	0.00	0.00
1,400.00	9.15	312.76	1,388.61	104.93	-113.47	154.55	0.00	0.00	0.00
1,500.00	9.15	312.76	1,487.33	115.73	-125.15	170.46	0.00	0.00	0.00
1,600.00	9.15	312.76	1,586.06	126.53	-136.82	186.36	0.00	0.00	0.00
1,700.00	9.15	312.76	1,684.79	137.33	-148.50	202.27	0.00	0.00	0.00
1,800.00	9.15	312.76	1,783.51	148.13	-160.18	218.18	0.00	0.00	0.00
1,900.00	9.15	312.76	1,882.24	158.93	-171.86	234.08	0.00	0.00	0.00
2,000.00	9.15	312.76	1,980.97	169.73	-183.53	249.99	0.00	0.00	0.00
2,100.00	9.15	312.76	2,079.69	180.53	-195.21	265.89	0.00	0.00	0.00
2,200.00	9.15	312.76	2,178.42	191.33	-206.89	281.80	0.00	0.00	0.00
2,300.00	9.15	312.76	2,277.15	202.13	-218.57	297.70	0.00	0.00	0.00
2,400.00	9.15	312.76	2,375.88	212.93	-230.24	313.61	0.00	0.00	0.00
2,500.00	9.15	312.76	2,474.60	223.73	-241.92	329.51	0.00	0.00	0.00
2,600.00	9.15	312.76	2,573.33	234.53	-253.60	345.42	0.00	0.00	0.00
2,700.00	9.15	312.76	2,672.06	245.32	-265.28	361.33	0.00	0.00	0.00
2,800.00	9.15	312.76	2,770.78	256.12	-276.95	377.23	0.00	0.00	0.00
2,900.00	9.15	312.76	2,869.51	266.92	-288.63	393.14	0.00	0.00	0.00
3,000.00	9.15	312.76	2,968.24	277.72	-300.31	409.04	0.00	0.00	0.00
3,100.00	9.15	312.76	3,066.96	288.52	-311.99	424.95	0.00	0.00	0.00
3,200.00	9.15	312.76	3,165.69	299.32	-323.67	440.85	0.00	0.00	0.00
3,300.00	9.15	312.76	3,264.42	310.12	-335.34	456.76	0.00	0.00	0.00
3,400.00	9.15	312.76	3,363.14	320.92	-347.02	472.67	0.00	0.00	0.00
3,500.00	9.15	312.76	3,461.87	331.72	-358.70	488.57	0.00	0.00	0.00
3,600.00	9.15	312.76	3,560.60	342.52	-370.38	504.48	0.00	0.00	0.00
3,700.00	9.15	312.76	3,659.33	353.32	-382.05	520.38	0.00	0.00	0.00
3,800.00	9.15	312.76	3,758.05	364.12	-393.73	536.29	0.00	0.00	0.00
3,900.00	9.15	312.76	3,856.78	374.92	-405.41	552.19	0.00	0.00	0.00
4,000.00	9.15	312.76	3,955.51	385.71	-417.09	568.10	0.00	0.00	0.00
4,100.00	9.15	312.76	4,054.23	396.51	-428.76	584.00	0.00	0.00	0.00
4,200.00	9.15	312.76	4,152.96	407.31	-440.44	599.91	0.00	0.00	0.00
4,300.00	9.15	312.76	4,251.69	418.11	-452.12	615.82	0.00	0.00	0.00
4,400.00	9.15	312.76	4,350.41	428.91	-463.80	631.72	0.00	0.00	0.00
4,500.00	9.15	312.76	4,449.14	439.71	-475.47	647.63	0.00	0.00	0.00
4,600.00	9.15	312.76	4,547.87	450.51	-487.15	663.53	0.00	0.00	0.00
4,700.00	9.15	312.76	4,646.59	461.31	-498.83	679.44	0.00	0.00	0.00
4,800.00	9.15	312.76	4,745.32	472.11	-510.51	695.34	0.00	0.00	0.00
4,900.00	9.15	312.76	4,844.05	482.91	-522.18	711.25	0.00	0.00	0.00
5,000.00	9.15	312.76	4,942.78	493.71	-533.86	727.16	0.00	0.00	0.00

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Planning Report

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Company:	OXY USA RMAT	TVD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-28B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,100.00	9.15	312.76	5,041.50	504.51	-545.54	743.06	0.00	0.00	0.00
5,200.00	9.15	312.76	5,140.23	515.31	-557.22	758.97	0.00	0.00	0.00
5,300.00	9.15	312.76	5,238.96	526.11	-568.89	774.87	0.00	0.00	0.00
5,400.00	9.15	312.76	5,337.68	536.90	-580.57	790.78	0.00	0.00	0.00
5,500.00	9.15	312.76	5,436.41	547.70	-592.25	806.68	0.00	0.00	0.00
5,542.47	9.15	312.76	5,478.34	552.29	-597.21	813.44	0.00	0.00	0.00
Start Drop -2.00									
5,600.00	8.00	312.76	5,535.23	558.12	-603.51	822.02	2.00	-2.00	0.00
5,700.00	6.00	312.76	5,634.47	566.39	-612.46	834.21	2.00	-2.00	0.00
5,800.00	4.00	312.76	5,734.09	572.31	-618.86	842.92	2.00	-2.00	0.00
5,900.00	2.00	312.76	5,833.95	575.86	-622.70	848.16	2.00	-2.00	0.00
6,000.00	0.00	312.76	5,933.93	577.05	-623.98	849.91	2.00	-2.00	0.00
6,000.07	0.00	0.00	5,934.00	577.05	-623.98	849.91	2.00	-2.00	0.00
Start 0.00° Hold At 6000.07' - Mesaverde									
6,100.00	0.00	0.00	6,033.93	577.05	-623.98	849.91	0.00	0.00	0.00
6,173.07	0.00	0.00	6,107.00	577.05	-623.98	849.91	0.00	0.00	0.00
Williams Fork									
6,200.00	0.00	0.00	6,133.93	577.05	-623.98	849.91	0.00	0.00	0.00
6,300.00	0.00	0.00	6,233.93	577.05	-623.98	849.91	0.00	0.00	0.00
6,400.00	0.00	0.00	6,333.93	577.05	-623.98	849.91	0.00	0.00	0.00
6,500.00	0.00	0.00	6,433.93	577.05	-623.98	849.91	0.00	0.00	0.00
6,600.00	0.00	0.00	6,533.93	577.05	-623.98	849.91	0.00	0.00	0.00
6,700.00	0.00	0.00	6,633.93	577.05	-623.98	849.91	0.00	0.00	0.00
6,750.07	0.00	0.00	6,684.00	577.05	-623.98	849.91	0.00	0.00	0.00
TOG = 639124.36, 1226420.70									
6,800.00	0.00	0.00	6,733.93	577.05	-623.98	849.91	0.00	0.00	0.00
6,900.00	0.00	0.00	6,833.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,000.00	0.00	0.00	6,933.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,100.00	0.00	0.00	7,033.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,200.00	0.00	0.00	7,133.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,300.00	0.00	0.00	7,233.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,400.00	0.00	0.00	7,333.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,500.00	0.00	0.00	7,433.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,600.00	0.00	0.00	7,533.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,700.00	0.00	0.00	7,633.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,800.00	0.00	0.00	7,733.93	577.05	-623.98	849.91	0.00	0.00	0.00
7,900.00	0.00	0.00	7,833.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,000.00	0.00	0.00	7,933.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,100.00	0.00	0.00	8,033.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,133.07	0.00	0.00	8,067.00	577.05	-623.98	849.91	0.00	0.00	0.00
Target = 639124.36, 1226420.70									
8,200.00	0.00	0.00	8,133.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,300.00	0.00	0.00	8,233.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,400.00	0.00	0.00	8,333.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,500.00	0.00	0.00	8,433.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,600.00	0.00	0.00	8,533.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,700.00	0.00	0.00	8,633.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,786.07	0.00	0.00	8,720.00	577.05	-623.98	849.91	0.00	0.00	0.00
Rollins									
8,800.00	0.00	0.00	8,733.93	577.05	-623.98	849.91	0.00	0.00	0.00
8,900.00	0.00	0.00	8,833.93	577.05	-623.98	849.91	0.00	0.00	0.00
9,000.00	0.00	0.00	8,933.93	577.05	-623.98	849.91	0.00	0.00	0.00
9,100.00	0.00	0.00	9,033.93	577.05	-623.98	849.91	0.00	0.00	0.00

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Planning Report

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Project:	Garfield County, CO NAD27	MD Reference:	GL 8429' & RKB 30' @ 8459.00ft (H&P)
Site:	Cascade Creek 697-05C Pad	North Reference:	True
Well:	CC 697-05-28B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,186.07	0.00	0.00	9,120.00	577.05	-623.98	849.91	0.00	0.00	0.00
PBHL = 639124.36, 1226420.70									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
CC 697-05-28B Target - plan hits target center - Circle (radius 50.00)	0.00	0.00	8,067.00	577.05	-623.98	639,124.36	1,226,420.70	39° 33' 22.115 N	108° 14' 38.150 W

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,000.07	5,934.00	Mesaverde		0.00	
6,173.07	6,107.00	Williams Fork		0.00	
8,786.07	8,720.00	Rollins		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.00	200.00	0.00	0.00	Start Build 2.00	
657.61	655.66	24.76	-26.78	Start 9.15° Hold At 657.61'	
5,542.47	5,478.34	552.29	-597.21	Start Drop -2.00	
6,000.07	5,934.00	577.05	-623.98	Start 0.00° Hold At 6000.07'	
6,750.07	6,684.00	577.05	-623.98	TOG = 639124.36, 1226420.70	
8,133.07	8,067.00	577.05	-623.98	Target = 639124.36, 1226420.70	
9,186.07	9,120.00	577.05	-623.98	PBHL = 639124.36, 1226420.70	